

## **ABSTRACT**

The system includes a permanent magnet three-phase motor and an electronic current controlled inverter by pulse width modulation. The motor has twenty-two poles and twenty-four slots, three phases and a cylindrical outer rotor. This structure minimizes torque ripple and maximizes energy efficiently. All coil windings are wound around the stator teeth. A winding configuration is proposed. The motor phases are supplied by alternating rectangular current waveforms. A specific inverter control system is described to maximize efficiency and reduce current ripple and electromagnetic interference under motorizing or generating operations. The current control is realized by using the MOSFETs voltage for the current measurement.